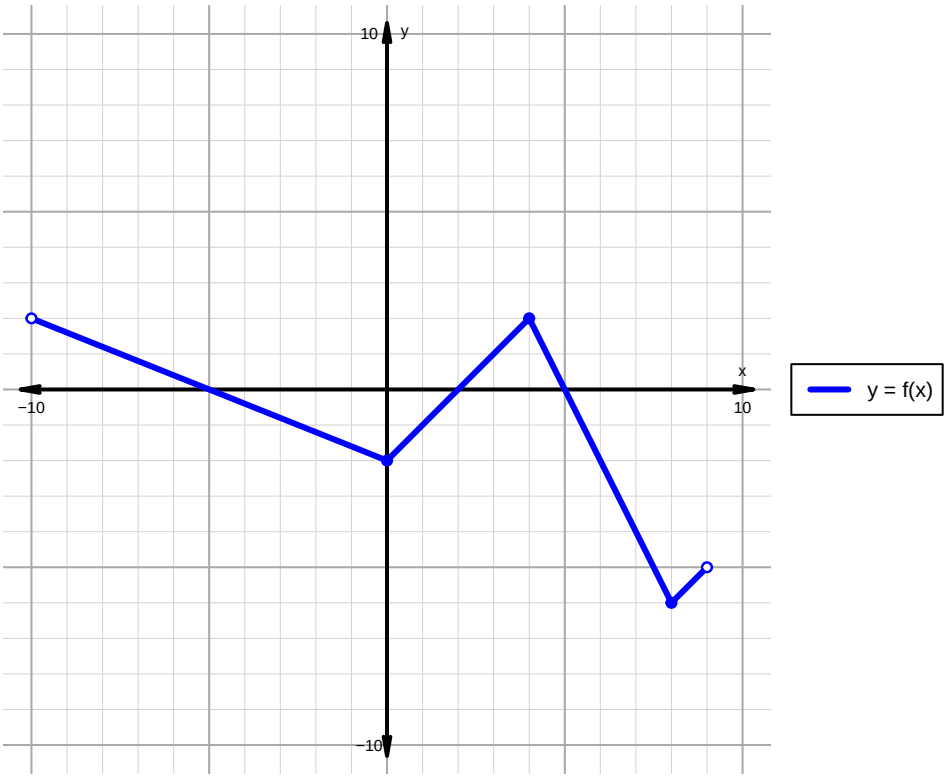
Name: Date:

Intervals, Transformations, and Slope Solution (version 84)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-10,-5)\cup(2,5)$
Negative	$(-5,2)\cup(5,9)$
Increasing	$(0,4)\cup(8,9)$
Decreasing	$(-10,0)\cup(4,8)$
Domain	$(-10,9)$
Range	$(-6,2)$

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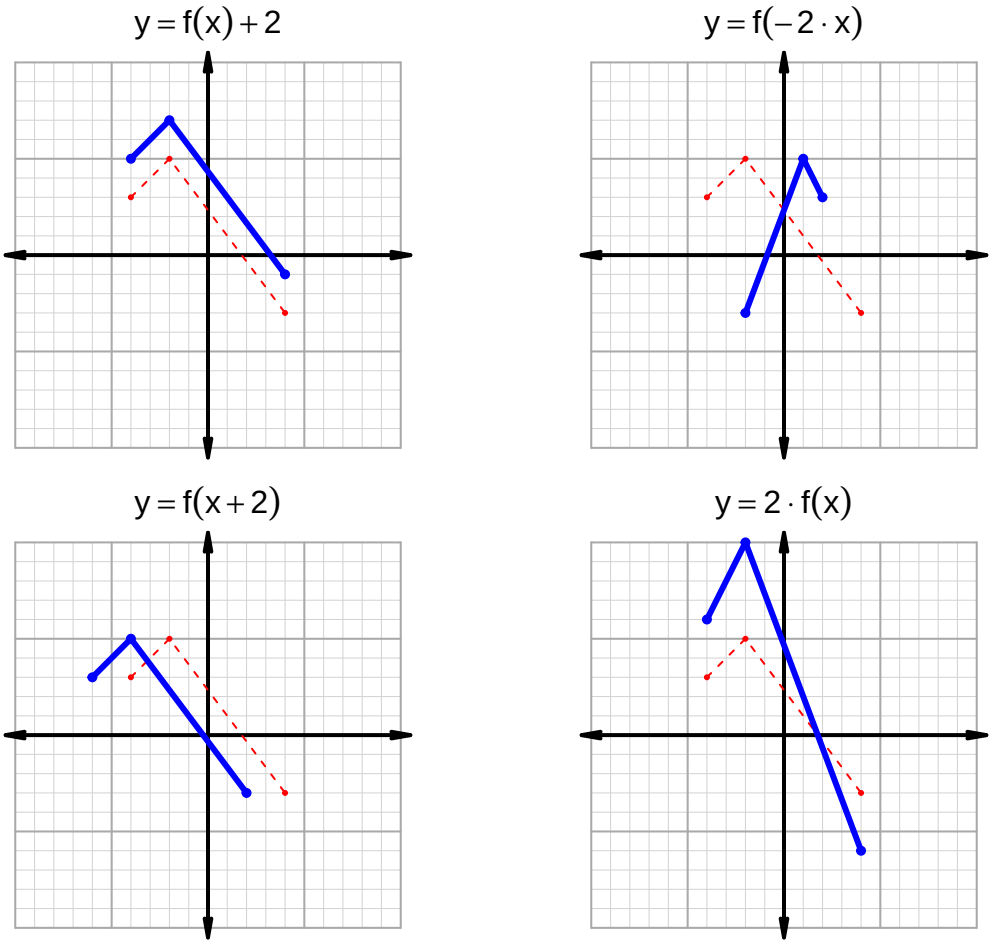
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 30$ and $x_2 = 62$. Express your answer as a reduced fraction.

x	$g(x)$
9	30
30	81
62	9
81	62

$\frac{g(62)-g(30)}{62-30} = \frac{9-81}{62-30} = \frac{-72}{32}$

The greatest common factor of -72 and 32 is 8. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-9}{4}$$